



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/528,000	03/17/2000	Shiri Kadambi	P108339-09065	3384

32294 7590 07/28/2003

SQUIRE, SANDERS & DEMPSEY L.L.P.  
14TH FLOOR  
8000 TOWERS CRESCENT  
TYSONS CORNER, VA 22182

EXAMINER

HOANG, THAI D

ART UNIT	PAPER NUMBER
2667	8

DATE MAILED: 07/28/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	09/528,000	KADAMBI ET AL.	
	<b>Examiner</b>	<b>Art Unit</b>	
	Thai D Hoang	2667	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 03 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1) Responsive to communication(s) filed on Application filed on 03/17/2000.

2a) This action is **FINAL**.      2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4) Claim(s) 1-6 is/are pending in the application.

4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

5) Claim(s) \_\_\_\_\_ is/are allowed.

6) Claim(s) 1-6 is/are rejected.

7) Claim(s) \_\_\_\_\_ is/are objected to.

8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11) The proposed drawing correction filed on \_\_\_\_\_ is: a) approved b) disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12) The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All b) Some \* c) None of:

1. Certified copies of the priority documents have been received.

2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.

3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) The translation of the foreign language provisional application has been received.

15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

1) Notice of References Cited (PTO-892)

2) Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3&6.

4) Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.

5) Notice of Informal Patent Application (PTO-152)

6) Other:

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 22 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 20. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

Claims 1-2 and 5-6 are rejected under 35 U.S.C. 102(e) as being unpatentable over Hoffman et al, US Patent No. 6,094,435, hereafter referred to as Hoffman.

Regarding claim 1, Hoffman discloses a system and method for a quality of service in a multi-layer network element. Hoffman discloses that the system performs the step of forwarding received packets from an input port to one or more output ports with quality of service; abstract; col. 5, lines 4-5 (receiving an incoming packet on a first port of a network switch for transmission to a destination port). Also, Hoffman teaches that the system detects and handles congestion in an output port of a multi-layer network element comprises a central processor unit (CPU) and a switching element.

The switching element is configured to output packets to a network through output ports; col. 5, lines 6-10; abstract; col. 7, lines 49-59 (determining if the destination port is a monitored port). Furthermore, Hoffman teaches that when output queues exceed or meet a threshold value below the queue's capacity packets are randomly discarded. When the queue becomes full, the network element determines which flow caused the queue to overflow; see abstract (determining a queue status of destination port, if said destination port is determined to be a monitored port). In addition, Hoffman discloses that the system comprises the step of Scheduling of multiple output queues at each output port uses a weight round robin approach that allocates a weight portion of packets to transmit at each time interval; abstract; and a software running on the router 24 parses an incoming packet to determine various characteristics about the packet, including the type of the protocol being used and the source and destination(s). Other determinations based on examining the packet may be necessary, such as priority and quality of service (QoS) factors such as priority and bandwidth reservation; col. 7, lines 49-55 (pre-scheduling transmission of said incoming packet to said destination port if said destination port is determined to be a monitored port.)

Regarding claim 2, Hoffman discloses that classification of packets into different queues results from global priority information output to the input port 50i by the forwarding logic 52, which the input port 50i passes to the output port 56i; col. 1, lines 22-31 (classifying said queue status of said destination port). Furthermore, Hoffman teaches that when output queues exceed or meet a threshold value below the queue's capacity packets are randomly discarded. When the queue becomes full, the network

element determines which flow caused the queue to overflow; abstract (taking action in accordance with said classification of said queue status.)

Regarding claim 5, Included in the output port 56i is a mapping logic 302 that translates the global priority information into a queue selection signal for storing the pointer from input port 50i; col. 19, lines 51-53, and 57-65. Furthermore, Hoffman discloses that when the queue Qi becomes full, a "queue full" interrupt is generated; col. 21, lines 64-65. Therefore, it indicates that the step of determining if the destination port further comprises the step of receiving a status message on a communication channel.

Regarding claim 6, the network element in the system disclosed by Hoffman is configured in multi-layer; abstract; fig. 1-2; col. 5, lines 2-9. It indicates that the network element (switch) is one of a plurality of network elements configured in a stack.

#### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 3-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hoffman et al, US Patent No. 6,094,435, hereafter referred to as Hoffman.

Regarding claim 3, Hoffman discloses that the global priority information is contained in a associated memory 42 entry field of three bits. The three bits are passed to the mapping logic 302, which outputs the queue selection signal. This mapping is determined by two programmable queue priority threshold values found in the mapping

logic 302. A first programmable priority threshold register PTR1 stores a first threshold value and a second programmable priority threshold register PTR2 stores a second threshold value

If  $p < \text{PTR1}$  then global priority =01

If  $\text{PTR1} \leq p < \text{PTR2}$ , then global priority =10

If  $p \geq \text{PTR2}$ , then global priority =11

where  $p$  is the value of the global priority field. Therefore, it implies that the method disclosed by Hoffman comprises three types of queues, but they are different in range of classification; col. 19, line 54 – col. 20, line 17. See *In re Reven*, 156 USPQ 679 (CCPA 1968). It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the range of classification disclosed by Hoffman in order to manage the queues corresponding with the size of buffers.

Regarding claim 4, Hoffman teaches that a classification packets into different queues (a low priority queue and a high priority queue; col. 20, lines 12-16) results from global priority information output to the input port 50i by the forwarding logic 52. Output ports 56i use the global priority information to determine to which queue  $Q_i$  a given packet will be forwarded col. 20, lines 12-16; Therefore, it implies that writing an entry in a first queue if the queue status of the destination port is classified as the first type; and selecting a second queue and writing the entry into the second queue if the queue status of the destination port is classified as the second type. Hoffman disclose that the congestion logic 306 uses a Random Early Discard (RED) algorithm to randomly discard packets attempting to enter the queue  $Q_i$  after the queue's programmable

threshold register  $C_i$  associated with each queue  $Q_i$  is met or exceeded; col. 22, lines 51-61; abstract; col. 21, lines 36-65. Hoffman does not explicitly teach that a full queue is classified as a third type. However, one of ordinary skill in the art would be able to modify Hoffman system by classifying the queue full as a third type of queues. It would have been obvious to one of ordinary skill in the art at the time the invention was made to classify the queue full as the third type of queue in order to allow the system quickly responds incoming data packets when a queue of a output is full.

### ***Conclusion***

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The following references are cited to further show the state of the art with respect to the application:

US Patent No. 5,299,190 A to LaMarie et al

US Patent No. 6,246,687 B1 to Siu

US Patent No. 5,255,265 A to Eng et al

US Patent No. 6,338,078 B1 to Chang et al

US Patent No. 6,304,552 B1 to Chapman et al

US Patent No. 6,134,217 A to Stiliadis et al

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Thai D Hoang whose telephone number is (703) 305-3232. The examiner can normally be reached on Monday-Friday 8:30am-5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chi Pham can be reached on (703) 305-4378. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9314 for regular communications and (703) 872-9314 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-4700.

Thai Hoang  
July 22, 2003

  
CHI PHAM  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2800 7/24/03